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The Impact of Technology on News Reporting: A Longitudinal Perspective

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Abstract

Based on measurements across the past decade, this paper challenges common wisdom about new technologies' transformative impact on news reporting. The telephone still reigns as queen of the news production battlefield, while use of the Internet and social media as news sources remains marginal. In face-to-face reconstruction interviews, news reporters at three leading national Israeli dailies detailed reporting of recently published items. Findings conform to the Compulsion to Proximity theory, in which technological impact on professional and lay actors is restrained by the need to maintain richer interactions based on *copresence*.

Keywords

print media, news and reporting, quantitative methodology

Of all facets of journalism that can be shaped and reshaped by new technologies, news reporting is of special interest as the first link in the news chain and the core of journalistic activity.[1] During this stage, technologies can set the range of news, events, human agents, and evidence that reporters can or cannot detect, access, and report within a given time and the journalistic and epistemic standards of their work.

Ironically, despite numerous studies,[2] the specific role of technology in news reporting today is becoming more enigmatic because of four major constraints. First, news reporting is becoming more fluid and less observable, as information flows inside and outside the newsrooms, thanks to an increasing number of platforms. Second, scholarly interest in technology often declines into innovation bias, focusing

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exclusively on new technologies[3] as "one of the biggest hopes (and hypes)" of journalism.[4] Third, some technology studies are either too broad (trying to encompass the impact of every possible technology on every stage and actor[5]) or too narrow (focusing on a small subset of technologies, sometimes even on a single one[6]) to capture the realities of news reporting. Fourth, if the technological environment is constantly in flux, then any single measurement raises doubts concerning whether its findings are still valid.

The purpose of this article is to contrast prevailing theories concerning technology's impact on news reporting with realities on the ground, based on a ten-year perspective. This study, the last of three conducted at five-year intervals (2001, 2006, 2011), detects the role of technology in contributing story leads and raw information to specific samples of published stories, using a series of face-to-face reconstruction interviews, in which reporters who authored recently published items ($N = 1,003$) were asked to detail how they obtained them. Each item entailed its own "microinterview." Each of the three sets of interviews used the same method and the same research tools and focused on the same three Israeli nationwide dailies.[7]

Literature Review and Conceptual Background

It is ironic to note that the ways in which journalists report the news—and their uses of technology for that matter—are becoming increasingly murky. The successors of the old-style Hollywood legmen are variously described by current scholars: "desk-bound," "screen-bound" or "computer-bound" "mouse monkeys,"[8] "mojos" (mobile journalists) who collect and disseminate information via mobile technologies,[9] heavy users of e-mail or social networks and microblogging[10] moderators of citizen copy,[11] old-fashioned telephone addicts,[12] or dedicated legworkers and moral eyewitnesses.[13] Obviously, all the above may be valid, as the same story may involve different technologies. Some technologies, however, may epitomize today's reporting more than others, at least insofar as regularity is concerned.

Exploring the role of technology in news reporting is consequential, as it can illustrate the labor conditions, nature, dynamics and standards of news production, the typical physical and social position of journalists in these processes, and even some of the epistemic qualities of news.[14] For example, technologies can indicate whether news production is basically a spatial or a temporal activity, if it is based on firsthand or second-hand experience; whether it results from oral negotiations or documentation; and whether news is obtained proactively or reactively.

More importantly, exploring the role of technology in news reporting can help resolve differences between the two theoretical schools that are termed here the *transformationists* and the *adaptationists*. According to the dominant camp of *transformationists*,[15] new technologies are radically changing news reporting. Some scholars subscribe to the *transformationist* position implicitly by their exclusive focus on new technologies and the suggestion that they are used increasingly.[16]

However, the *adaptationist* perspective is much less prevalent in the literature and hence will be addressed here in greater detail. According to the adaptationist view,[17]

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even if reporters are personally "techies"[18] or fans of "cutting edge gizmos"[19]—as many journalists are—they do not simply replace older technologies with new ones in their core news reporting assignments. During the later stages of editing, presentation, distribution, promotion, consumption, storage, and retrieval, however, as well as in assignments such as content management—all of which are largely free of the special constraints of source relations—new technologies do play an extensive role. Some of the technologies are even used for news reporting, although primarily for "auxiliary functions" and "utility information,"[20] such as monitoring competitors' work, findings sources, and self-updates. The three channels most valued by journalists from eleven European countries were face-to-face encounters, telephone conversations, and search engines. According to O'Sullivan and Heinonen, "This is not to say that they are recalcitrant technophobes, but they welcome the Net when it suits their existing professional ends."[21]

This position is endorsed by scholars of urban geography, sociology of daily life, and ethnomethodology of technology, according to which older channels of communication, such as copresence (face-to-face meetings) and telephone conversations, continue to play a vital role in professional and private settings.[22] "The so-called communication revolution adds to, rather than replaces, copresence."[23] According to these scholars, modern social actors use a portfolio of different channels, as "many community ties are complex dances of face-to-face encounters, scheduled meetings, two-person telephone calls, e-mails to one person or several, and broader online discussion among those sharing interests."[24] In journalism, according to Tuchman, even three decades ago, such a portfolio enabled the reporter to "decide which of today's assignments require his presence at hearings, which can be covered by telephone, which can be reconstructed through interviews with key informants, and which 'merely' require him to stick his head through a door to confirm that 'everything' is as anticipated."[25] Interestingly, in society as a whole, more extensive Internet use was associated with broader use of older technologies, such as telephone calls and face-to-face meetings.[26] In many other occupations, such as medicine, finance, and architecture, the impact of new technologies is restrained by the need for copresence and mutual trust.[27]

The driving forces behind the transformationist approach are a combination of more efficient technologies and growing pressure due to scarce resources.[28] Under such pressure, several scholars claim, journalists maintain less physical and oral interaction with their sources in favor of newer technologies that tend to be textual.[29] However, the driving forces behind the adaptationist approach are the need to operate technology in ways that conform to the specific social, cultural, epistemic, and ontological context of news reporting. The choice of technology for news reporting is narrowed by five principal factors:

The Centrality of News Sources

Journalism is a source-oriented occupation.[30] This means that if "news is not what happens, but what someone says has happened or will happen,"[31] then new technologies must connect journalists with that "someone" no less effectively than older ones.

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The Compulsion toward Interactivity

The "negotiated nature" of news and the role of journalists as "interactional experts"[32] prioritize the use of communication technologies that enable interaction. According to Swidler, social practices in different professions "remain stable not only because habit ingrains standard ways of doing things, but because the need to engage one another forces people to return to common structures."[33]

Occupational Conservatism

Despite substantial changes in the news environment in recent decades, professional practices in journalism remain "stubbornly unchanged."[34] According to Ryfe, newswork remains remarkably stable in the United States as a result of the strong habitual nature of news practices, their institutional status, and their role in constituting the basic definition of what counts as journalism. Some suggest that younger journalists are more "tech savvy" and hence less conservative.[35]

Organizational Priorities

News organizations tend to promote technologies only if they can increase the speed, efficiency, and attractiveness of news products.[36] Poor news organizations may have a hard time adopting technologies, especially those that are capital-intensive.

The Hierarchy of Communication Channels

This most important factor corresponds to some broader social hierarchies, taking into account traits such as sensory and epistemic richness of each channel, its immediacy, accessibility, "social presence,"[37] verifiability, and potential for exclusiveness.

The journalistic hierarchy enables incorporation of the numerous and constantly changing devices into three broad categories of channels and technologies:

- *Nonmediated channels*: Copresence at news scenes and face-to-face interviews constitute the ideal channel inside and outside journalism.[38] On one hand, Fishman's norms, according to which "good news practices entail going out in the world to get stories. Anything else is seen as a matter of crass expediency or downright cheating,"[39] may appear somewhat obsolete in the Internet era. On the other hand, to this day, journalism scholars emphasize the epistemic, authoritative, ethical, and sometimes even moral values of "being there."[40] Copresence embodies the highest degree of "social presence"—a "focused interaction" that maximizes sensory richness, including "facial gestures, body language, voice intonation, and a thousand other particulars."[41] Outside journalism, copresence is described in terms that sound very compelling for journalists, enabling one "to know what is really going on" and "what the place is really like."[42] According to Boden and Molotch, copresence becomes mandatory if the information is sensitive, complex, uncertain, and susceptible to

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misunderstanding, requiring intimacy, trust, assessment of commitment, and detection of lies.

- *Oral technology*: Due to chronic shortages of accessible scenes and people within given deadlines, journalists often compromise their ideal channel. Their second choice, prior to the computer era, was the telephone, whose supremacy in news production was recognized by Marshall McLuhan and others. They explained its lure by its immediacy and spontaneity, enabling interview techniques, negotiation of source versions, and development of "chatty" relationships with sources.[43] Auditory copresence is considered the ultimate technology-mediated channel,[44] sharing more resemblance than difference with physical presence, enabling "intimacy across distance" and "intimacy at a distance," "mutually ratified participation in the conversation," and "conversationality in a way that preserves all the personality, recognizability and inflections of the ordinary voice," as well as nonverbal cues and "identifying markers," such as the other party's age, gender, ethnicity, and social position.[45] Does the telephone still dominate postmodern news environments? While never before challenged by so many sophisticated alternatives, its mobile offspring can revitalize auditory interactions and make reporters and sources accessible 24/7, thanks to the "flexibilization of people's paths through time-space,"[46] while preserving the discursive advantages of the landline.[47]
- *Textual technologies*: Textual technologies are "far thinner" interactions than auditory ones.[48] Journalists share an aversion to texts as a news source, except for confined niches such as court and investigative reporting[49] and for specific functions such as following competitors, detecting stories, and obtaining ready-made texts such as PR materials.[50] Texts give sources greater control over their messages, avoiding engagement in true dialogue with journalists, keeping the latter from using interview techniques and asking follow-up questions and leaving them with unilaterally dispatched accounts that were reviewed or even written by PR practitioners.[51] Furthermore, textual technologies are ineffective for gauging commitment and establishing trust, especially over emotional, personal, or financial issues.[52]

Following McManus,[53] the present study distinguishes between two principal stages of newsmaking: (1) news discovery, during which the reporter becomes acquainted with the existence of a potential new story, and (2) news gathering, in which the reporter obtains the building blocks of the news item. Based on this distinction, one may expect a broader adoption of new technologies during the discovery phase—that serves primarily for kicking off news processes—and less in the news gathering phase, that yields publishable materials.

Research Question and Hypotheses

Based on this theoretical framework, the article seeks to address one major research question:

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RQ1: Do the patterns in which journalists have applied technology to obtain information during the ten-year period studied (2001, 2006, 2011) support the transformationist approach or the adaptationist approach?

It is suggested that only shifts among the three clusters of channels—nonmediated, orally mediated, and textual—should be considered as supportive of the transformationist camp, while shifts inside clusters support the adaptationist camp. The research question is accompanied by four hypotheses:

H1: Findings will support the adaptive rather than the transformative approach.
H2: Despite the largely stable picture, some decline is expected in nonmediated and telephone-mediated coverage in favor of textual technologies.
H3: New technologies will be used more broadly during the news discovery phase and less in the later stage of news gathering.
H4: New technologies will be used more frequently by younger reporters.

The study used the following method to test these hypotheses.

Method

The current study used face-to-face reconstruction interviews, as traditional methods, such as observations, interviews, and surveys, cannot be used for systematic capture of the frequency to which different technologies are actually used for core assignments of news reporting. In accordance with the reconstruction method, which has displayed its viability in exploring different aspects of news production,[54] the sample consisted of news reporters from different news beats, who were interviewed face-to-face, to recreate—contact by contact—the technological "biographies" of large random samples of their stories that were published during the previous month. The interviews were preceded by three steps:

Random Selection of Beats and Reporters

A full list of reporters and news beats at each of the leading Israeli national dailies during the three studied periods was prepared after two months of byline monitoring. The list covered three clusters of beats: politics (e.g., diplomatic affairs, politics, parliamentary affairs), domestic affairs (e.g., regional and police reporters and thematic beats, such as environment and education), and business affairs (e.g., banking, treasury and macroeconomics, finance, real estate). Two reporters in 2001, nine in 2006, and five in 2011 were replaced after refusing to participate or having published fewer than ten items per month. To ensure that the replacement has minimal impact, if any, a "substitute" reporter selected was the one with the most parallel news beats in the same beat cluster. Considering the growing liquidity of the journalistic job market in Israel, following waves of layoffs, eroding status, diminishing salaries, and the

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Table 1. The Sampling Scheme.

Year of study	2001	2006	2011
Number of items	448	300	264
Number of items per reporter[a]	15	10	8
Number of journalists	30	30	33
Interview period	May to June 2001	December 2006 to January 2007	December 2011 to January 2012

[a]The number of items per reporter was reduced to address the lengthening of the questionnaire with questions that are not associated with the current study.

employment of increasingly younger journalists,[55] it is no wonder that fewer than half a dozen reporters remained in their position long enough to be interviewed three times.

Identification of All Published Items

The sampling period extended over four weeks—long enough to supply a rich mix of stories, but not long enough to cause participants any memory problems.

Random Sampling of News Items

To accommodate the longer questionnaire (covering aspects that are part of the larger research project), the number of items sampled per reporter was lowered across the decade studied, as shown in Table 1. To limit the duration of interviews from sixty to seventy-five minutes, the number of items per reporter was reduced in 2006 and 2011 after one week of interviews. In addition, the number of reporters was increased to eleven per organization in 2011.

Special seating arrangements were used to avoid infringement of source confidentiality. The reporter (with a pile of sampled stories) and interviewer (with a pile of questionnaires) sat on opposite sides of a table with a screen placed between them to give the reporter privacy each time he chose an item from the sample pile. Data were created by assigning participants' oral replies to *categories* in a closed quantitative questionnaire.

Another measure for limiting interview length was covering 100% of the news discovery contacts, but no more than three gathering contacts per item in 2001 and four in the later periods. These slight changes had only a negligible effect, however, as in each of the studied periods, more than 90% of the total gathering contacts were covered.

To address the complexities of the gathering phase, that might involve up to four different contacts per item and up to five different technologies per contact, the share of each technology was first calculated within each contact, then averaged across the contacts within each item and finally averaged across items. In the discovery phase, that involves only one contact (as the reporter first becomes acquainted with the

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potential new item only once), the share of each technology was first calculated within each item and then averaged across items. To test the significance of differences between periods, we used MANOVA analysis. MANOVAs were calculated separately for specific technologies and for grouped technologies with technologies serving as dependent variables and year as the independent variable. To avoid interdependence, the category "Other" was omitted from the analysis in both cases.

Findings

For the first time, the findings supply a ten-year perspective on the role of technology in obtaining published news, based on three consecutive measurements. They include every channel (old and new, mediated and nonmediated) that had any contribution to the news discovery and news gathering of samples of items, in a manner that yields a straightforward total of 100% of the contacts at each of the news phases.

To determine whether technologies had a transformative impact on news reporting, the concern of the first hypothesis, one should compare the detailed picture in Table 2 with the subtotals of each cluster of technologies.

Findings support **H1**: Technology did **not** play a transformative role in news reporting. Although some of the differences are significant, the general picture suggests a remarkable stability. The significant changes represent either technologies whose contribution continues to be negligible, or—more importantly—new technologies that "cannibalized" older ones in the same cluster of textual technologies. More specifically, the pager and the fax made way primarily for e-mail. Reliance on social networks and on the Internet as news sources is marginal; social networks contributed 0.4% of the information in news gathering (rounded to 0 in the table), and Internet use did not exceed 4% throughout the decade.

The dominant and most remarkably stable technology (even displaying a slight rise in the news discovery phase) is the telephone. Although it does include a growing mobile component,[56] whose exact share could not be determined in 2011, we propose considering mobile calls to be an extension of landline telephony, as their conversational patterns are almost identical.[57] Nonmediated channels remain relatively unchanged, with a slight decline in the contribution of face-to-face contacts during the news discovery stage, as explained below.

H2 was not confirmed. Contrary to prevailing wisdom, as indicated in Table 2, nonmediated coverage is declining slightly—and only in the news discovery phase (following an occasional and serendipitous small series of cases in 2001 in which reporters found a lead for an unexpected story in a face-to-face encounter). Telephone-mediated coverage is even rising in the discovery phase. These findings suggest that the common-sense equation "more pressure equals less interaction" needs some reconsideration.

Findings support **H3**, according to which new technologies (Skype, SMS, e-mail, Internet, and social networks) are used more widely during the news discovery phase. Throughout the decade, new technologies contributed 25% of the contacts in the news discovery phase, compared with 17% in the gathering phase, $F(1, 1000) = 38.13$; $p < .001$.

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Table 2. Mean Percentages of Technology Use to Obtain the Sampled Items.

		News discovery stage				News gathering stage			
		Time period				Time period			
Technology type	Technology	2001 (*N* = 448) %	2006 (*N* = 279) %	2011 (*N* = 272) %	Significance	2001 (*N* = 448) %	2006 (*N* = 279) %	2011 (*N* = 276) %	Significance
Nonmediated	News scene	4	2	5		7	8	7	
	Face to face	10	6	6	*	8	7	6	
	Subtotal	14	7	10	*[a]	15	15	13	
Telephony	Telephone	40	49	49	**[a]	57	57	62	
	Skype	—	—	—		—	—	—	
	Subtotal	40	49	49	**[b]	57	57	62	
New text	Internet	4	3	4		4	2	4	
	E-mail	8	17	19	**[a]	5	13	14	**[a]
	SMS	—	—	4	**[b]	—	1	2	**[b]
	Social networks	—	—	—		—	—	—	*
	Subtotal	12	20	28	**[c]	9	16	21	**[b]
Old text	Fax	9	4	0	**[a]	10	3	0	**[a]
	Pager	15	11	5	**[b]	4	5	1	**[b]
	Mail	4	2	0	**[c]	3	1	0	**[a]
	Document	0	2	1	*[d]	1	2	1	*[d]
	Archive	—	—	1		1	—	1	
	Subtotal	29	19	7	**[c]	19	12	4	**[c]
Other	Mass media	6	4	2		1	—	—	
	Other	0	0	3		—	—	—	
Total		100	100	100		100	100	100	

Note. MANOVAs were calculated separately for specific technologies and for grouped technologies with technologies serving as dependent variables and year as the independent variable. To avoid interdependence the category "Other" was omitted from the analysis in both cases.

[a]Significant difference between 2001 and 2006, and between 2001 and 2011.

[b]Significant difference between 2001 and 2011, and between 2006 and 2011.

[c]Significant difference between 2001 and 2011.

[d]Significant difference between 2001 and 2006.

*$p < .05$. **$p < .001$.

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As expected, reporters are more open to use new technologies as long as they are less relevant to publishable information.

Another potential factor that may increase receptivity to new technologies is the reporter's age, as indicated in **H4**. All in all, 93 press reporters were interviewed across the decade. Their average age was 39 (SD = 11) and they spent about 14 years as reporters. Correlating reporters' age with their actual uses of technology confirms **H4**: There was a low but significant negative correlation between uses of new technologies and journalists' age, but only during the news discovery phase ($r = -.12$; $p = .0028$). This may suggest that age differences play a significant but limited role in the adoption of new technology.

Discussion

To what extent do these findings conform to the existing literature? Obviously, they challenge the transformationist school and other advocates of technology-generated changes in news,[58] although they do not necessarily contradict them, as new technologies may still play a wider role either in the later stages of editing, distribution etc.—stages that are not constrained by source relations—or in auxiliary functions of news reporting, as indicated above. Findings are consistent with studies that found slow adoption of new technology in U.S. and European newsrooms.[59] These studies suggest that conservative patterns of technology use are not unique to the case studied.

A brief remark regarding the Israeli case and its representativeness: The Israeli news market is dominated by national-level mainstream news organizations, serving a population of nearly eight million citizens from fewer than ten main newsrooms, most of which are located within eight miles of one another in Tel Aviv. The Israeli press is highly competitive and privately owned, increasingly suffering from the commercial crisis that characterizes Western media. Israeli journalists are technologically updated, just as their audiences are compared with their counterparts in other OECD countries, yet a recent study shows that Israeli TV news stations use new media and social media more for commercial and marketing than for editorial purposes. Israel represents a polarized, pluralistic political system, with national security high on its agenda, yet it is not clear how these factors can affect technology use, if at all, among news reporters.[60]

The findings raise an interesting question: If these are the patterns of technology use for news reporting, where exactly is the reporter located while using them? In the personal questionnaire, reporters estimated that about 40% of their work is performed from home, a third from the newsroom, and the rest from news scenes. According to Table 2, physical presence was involved in 10% of the news discovery contacts and 13% of the gathering contacts.

The relative stability found could not prevail without several changes to sustain it: The rise of the mobile telephone—which reinvigorated the enduring dominance of auditory communication—and the replacement of old and cumbersome textual technologies by new and more interactive ones. In addition, findings indicate a rising pattern of multichannel communication, that is, information from the same source that is obtained through more than one communication technology during the discovery

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phase (0% of the contacts in 2001, 29% in 2006, and 33% in 2011) and in the gathering phase (1%, 23%, and 29%, respectively).[61] The most prevalent combination was audio-textual—in particular, a sequence of communications including at least one e-mail and at least one telephone conversation.

Finally, the method behind this study has its shortcomings, as do all research methods. Although they probably constitute the only way to analyze news processes in quantifiable terms, reconstruction interviews suffer the drawback of reliance on self reports by human subjects. While a Danish study found reporters' versions almost perfectly consistent with sources' accounts,[62] participant observations could help triangulate the findings and explore the blind spots of the current research: the role of technology in unpublished items and in assignments that are not necessarily associated with specific items. Some of the methodological weaknesses, including reliance on self reports, were somewhat mitigated by anchoring reporters' testimonies in specific items, asking interviewees to report specific actions, rather than evaluate their own performance and focusing on freshly published materials, thereby minimizing possible memory gaps. Thanks to guaranteed anonymity, reporters not only cooperated extensively with the study, but also felt safe enough to report lower standards of journalism, such as avoidance of legwork and reliance on a single source. Although most such lower-standard behavior is not directly relevant to the current article, it is important to note that the current method may well have a bias toward underestimation of its incidence. Establishing the exact frequencies of these practices remains an almost impossible challenge; however, especially in the increasingly fluid and fragmented domain of news reporting, as methods that are free of self reports, such as observations, cannot measure frequencies of phenomena.

Conclusion

Based on three consecutive measurements (2001, 2006, 2011), this article reveals only limited adoption of new technologies for news reporting in the Israeli press over a recent ten-year period. Finding little innovation is an innovation in itself, especially considering the dominance of the transformationist school, according to which new technologies revolutionized news reporting. The last thing transformationists imagine is that a technology developed in 1876, that has been serving for over a century in the Western newsroom, would still dominate newswork in 2011, despite the continuous parade of new technologies.

From the perspective of science, technology, and society studies, findings suggest that more emphasis should be placed on the sovereignty of the users (reporters and sources) in the social construction of technologies or in their "translation" and application to the specific social context of news reporting.[63] According to sociologists of knowledge, the stabilizing mechanism perpetuating the routines of different professions, despite challenges such as new technologies, are their prevailing practices that are "constraining individual activity and organizing the contexts in which people act."[64] This applies *a fortiori* to a series of occupations, like news reporting, whose practitioners are classified by sociologists of knowledge as "interactional experts."[65] Hence new technologies that do not serve the interactional needs and preferences of

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interactional experts and are not easily interwoven into their prevailing practices can only play a limited role in their domain. This pattern is in line with theories of urban geography and sociology of daily life, that embrace the Compulsion to Proximity theory, according to which, even in highly advanced technological environments, professional and lay social actors adhere to "copresence."[66] Whereas outside journalism, social actors generally manifest physical copresence, journalists make do with auditory copresence most of the time, probably because physical copresence is largely unaffordable and unfeasible in prevailing news environments.

Moreover, the findings suggest that the iconic successor of the Hollywood depiction of the reporter as a legman is not the deskbound "mouse monkey" or "mojo," as scholars dubbed them, but rather the telephone aficionado, who keeps talking to news sources inside—and increasingly outside—the newsroom, while using newer devices for complementary functions.

Half a century ago, the dominance of auditory copresence in journalism could be explained simply by its immediacy. Today, however, when surrounded by myriad immediate alternatives, its remarkably enduring dominance invites an explanation that addresses deeper notions of journalism, such as the negotiated nature of news and the roles of reporters as "interactional experts" who do not work in the business of information in general, but rather in the type of information that originates among other human agents.

Findings indicate that reporters tend to conservatism, even when expected to display maximal receptivity to innovation—an observation that may disappoint scholars who correctly envisioned the vast potential of new technologies to release journalists from their restricted role as sources' "oral relays"[67] or help them adapt to changes in news environments. Empirically, findings may invite a new research agenda that insists on including use of new and old technologies in the same studies to avoid empirical lacunae and innovation bias.

Obviously, a ten-year perspective may still be too brief for detection of historical trends. Future replicators should be surprised, on one hand, if current trends continue despite hectic changes in the news environment. On the other hand, they may be equally surprised if the central trends detected here vanish entirely.

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